

What is claimed is:

1. An antifreeze/heat transfer fluid concentrate composition comprising:

(a) ethylene glycol; and

(b) a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor.

2. The composition of claim 1 wherein the polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor is selected from the group of propylene glycol and glycerol.

3. The composition of claim 2, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

4. The composition of claim 3, further comprising water in an amount sufficient to dissolve any additives that are not soluble in ethylene glycol.

5. An antifreeze/heat transfer fluid concentrate composition containing a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor comprising:

(a) from about 50% to about 99% by weight ethylene glycol; and

(b) from about 1% to about 50% by weight propylene glycol.

6. The composition of claim 5, further comprising at least one of the following additives: a

buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

7. The composition of claim 6, further comprising water in an amount sufficient to dissolve any additives that are not soluble in ethylene glycol.

8. An antifreeze/heat transfer fluid concentrate composition containing a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor comprising:

(a) from about 90% to about 99% by weight ethylene glycol; and

(b) from about 1% to about 10% by weight glycerol.

9. The composition of claim 8, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

10. The composition of claim 9, further comprising water in an amount sufficient to dissolve any additives that are not soluble in ethylene glycol.

11. A composition for use as an antifreeze/heat transfer fluid comprising:

(a) ethylene glycol;

(b) a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor; and

(c) water.

12. The composition of claim 11, wherein the polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor is selected from the group of propylene glycol and glycerol.

13. The composition of claim 11, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

14. A composition for use as an antifreeze/heat transfer fluid containing a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor comprising ethylene glycol, propylene glycol, and water, wherein the proportions of ethylene glycol and propylene glycol in the fluid are such that ethylene glycol comprises from about 50% by weight to about 99% by weight of the total weight of ethylene glycol and propylene glycol in the fluid, and propylene glycol comprises from about 1% by weight to about 50% by weight of the total weight of ethylene glycol and propylene glycol in the fluid.

15. The composition of claim 14, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

16. The composition of claim 14, wherein ethylene glycol comprises about 95% by weight of the total weight of ethylene glycol and propylene glycol in the fluid, and propylene glycol comprises about 5% by weight of the total weight of ethylene glycol and propylene glycol in the fluid.

17. The composition of claim 16, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

18. A composition for use as an antifreeze/heat transfer fluid containing a polyhydric alcohol having a boiling point above about 150°C (302°F) that acts as an alcohol dehydrogenase enzyme inhibitor comprising ethylene glycol, glycerol, and water, wherein the proportions of ethylene glycol and glycerol in the fluid are such that ethylene glycol comprises from about 90% by weight to about 99% by weight of the total weight of ethylene glycol and glycerol in the fluid, and glycerol comprises from about 1% by weight to about 10% by weight of the total weight of ethylene glycol and glycerol glycol in the fluid.

19. The composition of claim 18, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

20. The composition of claim 18, wherein ethylene glycol comprises about 95% by weight of the total weight of ethylene glycol and propylene glycol in the fluid, and glycerol comprises about 5% by weight of the total weight of ethylene glycol and glycerol in the fluid.

21. The composition of claim 20, further comprising at least one of the following additives: a buffer, corrosion inhibitor, defoamer, dye, scale inhibitor, surfactant or chelant.

22. A method for reducing the oral toxicity of fluids containing ethylene glycol comprising the steps of:

(a) providing a fluid containing ethylene glycol;

(b) providing at least one substance that acts as an alcohol dehydrogenase enzyme

5 inhibitor; and

(c) mixing a sufficient amount of the substance that acts as alcohol dehydrogenase enzyme inhibitor with the fluid containing ethylene glycol to reduce the toxicity of the fluid containing ethylene glycol.

23. The method according to claim 22, wherein the substance that acts as an alcohol dehydrogenase enzyme inhibitor is propylene glycol.

24. The method according to claim 22, wherein the substance that acts as an alcohol dehydrogenase enzyme inhibitor is glycerol.

25. The method according to claim 22, wherein the substance that acts as an alcohol dehydrogenase enzyme inhibitor is a polyhydric alcohol having a boiling point above about 150 degrees Celsius at atmospheric pressure.

26. The method according to claim 23, wherein propylene glycol is mixed with the fluid containing ethylene glycol such that the concentration of propylene glycol in the resulting mixture is between 1 weight percent and 50 weight percent of the sum of the weight of the ethylene glycol fraction of the mixture and the weight of the propylene glycol fraction of the  
5 mixture.

27. The method according to claim 23, wherein propylene glycol is mixed with the fluid containing ethylene glycol such that the concentration of propylene glycol in the resulting mixture is about 5 weight percent of the sum of the weight of the ethylene glycol fraction of the mixture and the weight of the propylene glycol fraction of the mixture.

28. The method according to claim 24, wherein glycerol is mixed with the fluid containing ethylene glycol such that the concentration of glycerol in the resulting mixture is between 1 weight percent and 10 weight percent of the sum of the weight of the ethylene glycol fraction of the mixture and the weight of the glycerol fraction of the mixture.

29. The method according to claim 24, wherein glycerol is mixed with the fluid containing ethylene glycol such that the concentration of glycerol in the resulting mixture is about 5 weight percent of the sum of the weight of the ethylene glycol fraction of the mixture and the weight of the glycerol fraction of the mixture.